

ABSTRACT OF THE INVENTION

The present invention provides cell-based screening assays designed to identify agents that regulate the activity of the polycystic kidney disease proteins encoded by the PKD-1 and PKD-2 genes and that may be useful in the treatment of polycystic kidney disease. The assays of the invention comprise the contacting of genetically engineered cells expressing a mutant or truncated PKD gene product with a test agent and assaying for a decrease in the PKD mediated mutant phenotype. Characteristics associated with such a mutant phenotype include increased adherence to type I collagen coated surfaces; apical expression of NaK-ATPase on the cell membrane; increased expression of β -2-NaK-ATPase; and decreased focal adhesion kinase (FAK) incorporation into focal adhesion complexes, and inability to form tubular structures in a gel matrix. To facilitate the screening methods of the invention, cells may be genetically engineered to express epitope tagged PKD gene products and/or epitope tagged PKD interacting proteins (PKD-IP). Such interacting proteins include, for example, focal adhesion complex proteins such as FAK, paxillin, vinculin, talin and the like.